

CLAIMS:

1. A monitoring device configured to monitor a remote status of mobile assets, comprising:
 - a position location unit configured to determine a location of a remote device;
 - a simplex satellite transmitter configured to transmit the location to one or more satellites in low earth orbit;
 - a power source; and
 - a controller including a power management unit configured to control a power state of the position location unit and the simplex satellite transmitter, and to periodically enable and disable power from the power source to the position location unit and the simplex satellite transmitter.
2. The monitoring device of claim 1, wherein the position location unit comprises a GPS receiver subsystem.
3. The monitoring device of claim 1, wherein the power source comprises a battery.
4. The monitoring device of claim 1, wherein each of the one or more satellites operate as a bent-pipe relay device.
5. The monitoring device of claim 1, wherein the controller further comprises:
 - an external interface having at least one of a plurality of alarm inputs, a configuration interface configured to receive modifications to configuration parameters, and an external data unit configured to receive external data,

wherein the power management unit is further configured to control a power state of the external interface and to periodically enable and disable power from the power source to the external interface.

6. The monitoring device of claim 5, wherein the power management unit is further configured to disable power and then enable power on an interval schedule.

7. The monitoring device of claim 6, wherein the controller is further configured to control the position location unit to determine the location and the simplex satellite transmitter to transmit the location on the interval schedule.

8. The monitoring device of claim 7, wherein the interval schedule is a repeated fixed interval.

9. The monitoring device of claim 7, wherein the interval schedule is a set of fixed intervals sequentially executed and repeated as a set.

10. The monitoring device of claim 7, wherein the interval schedule is adjusted with a randomization term to pseudo-randomly vary the interval schedule.

11. The monitoring device of claim 7, wherein the controller is configured to detect at least one of the plurality of alarm inputs, and upon detection of an alarm input, to control the simplex satellite transmitter to transmit alarm data.

12. The monitoring device of claim 7, wherein the controller is configured to detect at least one of the plurality of alarm inputs, and upon detection of an alarm input, to enable power to the simplex satellite transmitter and the position location unit, and to control the position location unit to determine the location and the simplex satellite transmitter to transmit the location and alarm data.

13. The monitoring device of claim 7, wherein the controller is configured to detect at least one of the plurality of alarm inputs, and upon detection of an alarm input, to enable power to the external interface.

14. The monitoring device of claim 7, wherein the controller is configured to detect modifications to the configuration parameters, and upon detection of modifications to the configuration parameters, to modify operation in accordance with the configuration parameters.

15. The monitoring device of claim 7, wherein the controller is configured to detect external data from the external data unit, and upon detection of external data, to control the simplex satellite transmitter to transmit the external data.

16. The monitoring device of claim 7, wherein the controller is configured to queue transmissions to the simplex satellite transmitter and to control the simplex satellite transmitter to transmit the queued transmissions as a block to reduce on-air traffic.

17. The monitoring device of claim 7, wherein the controller is configured to control the simplex satellite transmitter to periodically transmit a health status of the remote device.

18. The monitoring device of claim 7, further comprising a motion detection unit.

19. The monitoring device of claim 18, wherein the controller is configured to control the position location unit to determine the location and the simplex satellite transmitter to transmit the location upon detection by the motion detection unit of motion.

20. The monitoring device of claim 18, wherein the controller is configured to control the simplex satellite transmitter to transmit a motion detection message upon a detection by the motion detection unit of a stop of motion followed by a start of motion.

21. The monitoring device of claim 18, wherein the controller is configured to control the simplex satellite transmitter to transmit a motion cease message upon a detection by the motion detection unit of a start of motion followed by a stop of motion.

22. A method for monitoring a remote status of mobile assets, comprising:

a) determining a location of a remote device;

b) transmitting the location using a simplex satellite transmitter to one or more satellites in low earth orbit;

c) receiving at least one of a plurality of alarm inputs, configuration parameters, and external data from an external data unit; and

d) managing power to perform steps a) - c) periodically on an interval schedule to reduce power consumption.

23. The method of claim 22, wherein the managing step comprises:

repeating steps a) - c) at fixed intervals.

24. The method of claim 22, wherein the managing step comprises:

repeating steps a) - c) at a set of unique fixed intervals sequentially executed and repeated as a set.

25. The method of claim 22, wherein the managing step comprises:

repeating steps a) - c) adjusted with a randomization term to pseudo-randomly vary a repeating time.

26. The method of claim 22, further comprising:

e) transmitting the alarm data using a simplex satellite transmitter to one or more satellites in low earth orbit upon receiving at least one of the plurality of alarm inputs.

27. The method of claim 22, further comprising:

e) detecting a change in motion state of the remote device and, upon detection of motion state change, performing step b) to transmit the location.

28. A computer program product configured to store plural computer program instructions which, when executed by a computer, cause the computer to perform the steps recited in any one of claims 22-27.

29. A securing device for a device enclosure comprising:

a mounting tab having a surface and a V-cut molded into the surface forming a deflection, and

wherein the mounting tab is molded into the device enclosure such that the removal of the mounting tab is enabled through deflection of the mounting tab.

30. A low-profile weather-proof enclosure device comprising:

a base wall;

a lid secured to the base wall; and

a gasket positioned between the base wall and the lid,

wherein the lid includes an overlapping wall which overlaps the base wall and extends below the gasket, and wherein the overlapping wall provides rigidity and a water barrier to the gasket.

31. The low-profile weather-proof enclosure device of claim 30, wherein the low-profile weather-proof enclosure device contains a monitoring device that comprises:

a position location unit configured to determine a location of a remote device;

a radio transmitter configured to transmit the location; and

a power source configured to provide power to the monitoring device.

32. The low-profile weather-proof enclosure device of claim 30, further comprising break-away mounting tabs secured to the base wall.

33. The monitoring device of claim 7, wherein the controller is configured to detect at least one of the plurality of alarm inputs, and upon detection of an alarm input, to enable or disable an alternate interval schedule for transmit of information.

34. The monitoring device of claim 7, wherein the controller is configured to detect a change of state of motion, and upon detection of motion state change, to enable or disable an alternate interval schedule for transmit of information.

35. The monitoring device of claim 7, wherein the controller is configured to detect a trigger location, and upon detection of trigger location, to enable or disable an alternate interval schedule for transmit of information.

36. The monitoring device of claim 7, wherein the controller is configured to detect at least one of the plurality of alarm inputs while in low power inventory mode, and upon detection of an alarm input in low power inventory mode, to transition to run mode to begin service as set by previous configuration.